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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/509,381

09/28/2004

Jean-Francois Jarno

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LOWE HAUPTMAN GILMAN & BERNER, LLP  
1700 DIAGNOSTIC ROAD, SUITE 300  
ALEXANDRIA, VA 22314

EXAMINER

NGUYEN, KHANH V

ART UNIT

PAPER NUMBER

2817

DATE MAILED: 03/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/509,381

Applicant(s)

JARNO ET AL.

Examiner

Khanh V. Nguyen

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 7, 12 and 13 is/are rejected.
- 7) ☒ Claim(s) 5, 8-11, 14 and 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 09/28/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

The drawing (Fig. 5) is objected to under 37 CFR 1.83(a) because they fail to show the relationship between block (76) and amplifier (70). Note, block (76) has two input terminals, but it is not clear how the terminal(s) is/are connected to the amplifier circuit (70). Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawing (Fig. 8) is objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the **“current lca” in claims 8 and 9** must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

Claims 1-4, 7-10, 14, 15 are objected to because of the following informalities:

Claim 1, page 6, line 2, "the tube" should correctly be -- the microwave tube amplifier --.

Claim 1, page 6, lines 5-6, "the gun" should correctly be -- the electron gun --.

Claim 1, page 6, line 6, "the gun" should correctly be -- the electron gun --.

Claim 1, page 6, line 9, "the current" should correctly be -- a current --.

Claim 1, page 6, line 11, "the output power" should correctly be -- the RF output power --.

Claim 1, page 6, line 11, "the amplifier" should correctly be -- the microwave tube amplifier --.

Claim 2, page 6, line 1, "the RF power" should correctly be -- the RF output power --.

Claim 2, page 6, line 2, "the microwave tube" should correctly be -- the microwave tube amplifier --.

Claim 3, page 6, line 1, "the RF power" should correctly be -- the RF output power --.

Claim 3, page 6, line 3, "output power Ps" should correctly be -- output power (Ps) --.

Claim 3, page 6, line 4, "Ps = kxlc1" should correctly be -- **Ps = k\*lc1** --.

Claim 3, page 6, line 4, "lc1" needs to define.

Claim 4, page 6, line 1, "the RF power" should correctly be -- the RF output  
power --.

Claim 7, page 7, lines 6-7, "the gun" should correctly be -- the electron gun --.

Claim 7, page 7, line 7, "the gun" should correctly be -- the electron gun --.

Claim 7, page 7, line 9, "the current" should correctly be -- a current --.

Claim 7, page 7, line 10, "the RF output power" should correctly be -- an RF  
output power --.

Claim 7, page 7, line 10, "this current" should correctly be -- the current --.

Claim 8, page 7, line 3, "current Ica" should correctly be -- current (Ic1) --.

Claim 9, page 8, line 2, "the amplifier" should correctly be -- the microwave tube  
amplifier --.

Claim 9, page 8, line 3, "voltage U1" should correctly be -- voltage (U1) --.

Claim 9, page 8, line 4, "the DC" should correctly be -- a DC --.

Claim 9, page 8, line 4, "voltage Vc1" should correctly be -- voltage (Vc1) --.

Claim 9, page 8, line 5, "current Ic1" should correctly be -- current (Ic1) --.

Claim 9, page 8, line 5, "current transformer" should correctly be -- AC  
transformer --.

Claim 9, page 8, line 6, "measurement circuit" should correctly be -- first means  
--.

Claim 9, page 8, line 8, "voltage Uc1" should correctly be -- voltage (Uc1) --.

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Claim 9, page 8, line 8, "current Ica" should correctly be -- **current (Ica)** --.

Claim 9, page 8, lines 8-9, "the supply current" should correctly be -- **the current** --.

Claim 9, page 8, line 9, "voltage Uc1" should correctly be -- **voltage (Uc1)** --.

Claim 9, page 8, line 11, "voltage Us1" should correctly be -- **voltage (Us1)** --.

Claim 9, page 8, line 11, "current Ic1" should correctly be -- **current (Ic1)** --.

Claim 10, page 8, line 3, "voltage Us1" should correctly be -- **voltage (Us1)** --.

Claim 10, page 8, line 3, "detector" should correctly be -- **first means** --.

Claim 10, page 8, line 4, "current Ic1" should correctly be -- **current (Ic1)** --.

Claim 10, page 8, line 4, "power Ps" should correctly be -- **power (Ps)** --.

Claim 10, page 8, line 4, "the output power" should correctly be -- **the RF output power** --.

Claim 10, page 8, line 4, "the amplifier" should correctly be -- **the microwave tube amplifier** --.

Claim 14, page 9, line 3, "detector" should correctly be -- **first means** --.

Claim 14, page 9, line 3, "current Ic1" should correctly be -- **current (Ic1)** --.

Claim 14, page 9, line 3, "power Ps" should correctly be -- **power (Ps)** --.

Claim 14, page 9, line 3, "the output power" should correctly be -- **the RF output power** --.

Claim 14, page 9, line 3, "the amplifier" should correctly be -- **the microwave tube amplifier** --.

Claim 15, page 9, line 3, "detector" should correctly be -- **first means** --.

Claim 15, page 9, line 3, "current Ic1" should correctly be -- **current (Ic1)** --.

Claim 15, page 9, line 3, "power Ps" should correctly be -- **power (Ps)** --.

Claim 15, page 9, line 3, "the output power" should correctly be -- **the RF output power** --.

Claim 15, page 9, line 3, "the amplifier" should correctly be -- **the microwave tube amplifier** --.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

Claims 1, 3, 4, 6, 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 7, it is not clear which "electron gun" is intended from the disclosed Figures.

The claims 3, 4, 6 are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign



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document and are replete with grammatical and idiomatic errors. Note, word(s) "likened approximately" and "likened".

Claim 4, phrase "monotonically increasing polynomial" is not clearly defined in the specification.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2, 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Radermacher et al. (4,701,717) in view of Barker (5,550,432). These references are applicant submitted PRIOR ARTs.

Regarding claims 1, 7, Radermacher et al. disclose the claimed invention except traveling wave tube (TWT) having electron beam, collector having electrodes as claimed. Radermacher et al. (Fig. 1) disclose a circuit comprising a traveling wave tube (WRV), a power source (SV), a measure collector current (IC), and a controller (SR) for receiving measured current (IC) can be read as claimed calculating/2<sup>nd</sup> means (see column 3, line 17 to column 3, line 36).

Barker (Figs. 1, 8) discloses method for measuring the RF power comprising: an electron beam (13); line (72) for interaction between an RF signal and the electron beam, line (72) having an amplified RF signal output; a collector having at least two electrodes (71, 6) for collecting the electron beam, these electrodes being separated from the gun by increasing distances, the first electrode being closest (see Fig. 8, column 8, lines 12-40).

Radermacher et al. and Barker are analogous art because they are from the same field of endeavor, namely microwave/traveling wave tube. Accordingly, it would have been obvious in view of the reference, taken as a whole, to have modified the circuit (WRV) of Radermacher et al. to have included a tube having an electron beam, as taught by Barker. Such a modification would have imparted the advantageous benefit of provided optimum operating characteristics (see col. 3, lines 12-40) as taught by Barker, to Radermacher et al. reference, thereby suggesting the obviousness of such a modification.

Regarding claim 2, wherein Radermacher et al. (Fig. 1) is a traveling wave tube (WRV).

***Allowable Subject Matter***

Claims 5, 8-11, 14, 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 3, 4, 6, 12, 13 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claim 5 calls for, among others, a formula for interpolating the transmission frequency of the TWT.

Claims 8, 9, 14, 15 call for, among others, first means comprise an AC transformer.

Claims 10, 11 call for, among others, a processing circuit having the functions thereof.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additional references (Cardwell et al. (6,111,358); Matsuoko et al. (6,369,511)) show further analogous prior art circuitry traveling wave tube having electron beam.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh V. Nguyen whose telephone number is (571) 272-1767. The examiner can normally be reached from 8:00 AM - 3:30 PM EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571) 272-1769. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**KHANH VAN NGUYEN**  
**PRIMARY EXAMINER**  
**Art Unit: 2817**